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Date: April 30, 2003

To: Examiner Lavarias, Arnel C.  
Art Unit: 2872

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Fax No.: 703/308-7724

APR 30 2003

From: Stephen P. Burr

TECHNOLOGY CENTER 2800

Subject: U.S. Application Ser. No. 09/976,462

Filed: October 12, 2001

Conf. No.: 9975

Title: FIBER ARRAY, METHOD FOR FABRICATING THE SAME AND  
OPTICAL DEVICE USING THE FIBER ARRAY

Our Ref.: 939\_030

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- Request for Reconsideration 3 pages
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Gina M. Husak

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Practitioner's Docket No.: 939\_030

PATENT #  
14  
5-6-03  
J. Lister

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of: Akira MATSUMOTO, Masashi FUKUYAMA

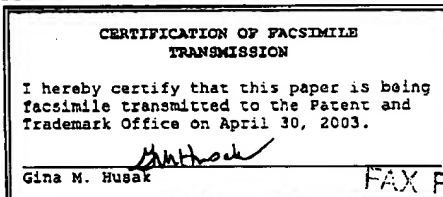
Ser. No.: 09/976,462

Group Art Unit: 2872

Filed: October 12, 2001

Examiner: Lavarias, Arnel C.

Confirmation No.: 9975

For: FIBER ARRAY, METHOD FOR FABRICATING THE SAME AND OPTICAL  
DEVICE USING THE FIBER ARRAYAssistant Commissioner for Patents  
Washington, DC 20231

APR 30 2003

## REQUEST FOR RECONSIDERATION

TECHNOLOGY CENTER 2800

Sir:

In response to the Office Action mailed February 19, 2003, Applicants respectfully request reconsideration and withdrawal of the rejections of record based on the following arguments.

Examiner Lavarias is thanked for courtesies extended to Applicants' undersigned representative during the telephonic interview on April 30, 2003. The substance of that interview has been incorporated into the following remarks.

Independent claim 1 recites a fiber array housing a stripped fiber in a V-groove of a V-groove substrate. The fiber array includes a fiber fixing substrate which fixes the stripped fiber and a peripheral adhesive disposed around the stripped fiber. With reference to Fig. 1 of the present application, the stripped fiber is designated by reference numeral 8 and the peripheral adhesive is designated by reference letter B. There is an additional adhesive A that is disposed between the end faces of the fibers and the waveguide D. This is not the adhesive referred to in claim 1, which specifically recites that the peripheral adhesive (B) is disposed around the stripped fiber which resides in the fiber fixing substrate.

With respect to independent claim 10, that claim relates the depth of the recess of the peripheral adhesive to the water absorption ratio of the peripheral adhesive. As explained during the interview, Applicants discovered that the peripheral adhesive will swell when

- 2 -

exposed to humid conditions and degrade the optical coupling in the device, as shown in Fig. 4C of the present application. Having recognized this problem, Applicants have recessed the peripheral adhesive with respect to the end face of the fibers. Claim 10 recognizes the relationship between the recess depth and the water absorption ratio of the peripheral adhesive, and is designed to prevent the drawbacks associated with the prior art shown in Fig. 4C of the present application.

In the Office Action, claims 1, 3 and 5-9 were rejected under §103 over Hirai in view of Ichiki, and claims 2, 4, 10 and 11 were rejected under §103 over Hirai in view of Ichiki. These rejections are respectfully traversed.

As explained during the interview, the PTO has relied upon the adhesive 11 shown in Fig. 8, for example, of Hirai as corresponding to the claimed peripheral adhesive. As Examiner Lavarias tentatively agreed during the telephonic interview, however, that adhesive corresponds to adhesive A shown in the drawings of the present application. There is no disclosure in Hirai of a peripheral adhesive disposed around the stripped fibers held within the fixing substrate, as presently claimed. Nor is there any disclosure that a peripheral adhesive, even if present, would extend to the end face 5a of the substrate 5, and thus be spaced 10  $\mu\text{m}$  from the end face of the fibers. Again, since there is no disclosure of peripheral adhesive in Hirai, and since there is certainly no disclosure that the peripheral adhesive is flush with the end face 5a, one skilled in the art would not have concluded that any such peripheral adhesive would be spaced from the end face of the fibers by 10  $\mu\text{m}$ , as asserted in the Office Action.

Ichiki fails to overcome these deficiencies in Hirai, and in fact further teaches away from the presently claimed invention. Fig. 6 of Ichiki shows problems with prior art structures that include peripheral adhesives flush with the end face of the fibers and/or fiber array. To address this problem, Ichiki uses a recess 50 that will prevent the adhesive 60 from exiting the fiber array and interfering with the end face of the optical fibers. Applicants respectfully submit that Ichiki also teaches that the fibers themselves could be extended at least 500  $\mu\text{m}$  from the end face of adhesive 60 to prevent this problem (paragraph [0006]). Accordingly, if one skilled in the art combined Hirai and Ichiki, any peripheral adhesive used in Hirai would be recessed from the end face of the fibers at least 500  $\mu\text{m}$ , as disclosed in

- 3 -

Ichiki. Accordingly, the "not more than 10  $\mu\text{m}$ " feature of claim 1 is patentable over the applied references.

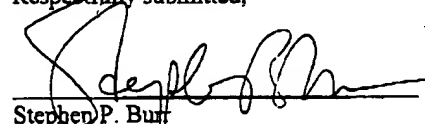
Nor is there any disclosure or suggestion in the applied references that the recess depth of the peripheral adhesive should be selected relative to the water absorption ratio of the adhesive itself. There is no recognition in the applied references of the swelling problem recognized by Applicants, and thus one skilled in the art would not have found the features of independent claim 10 to have been disclosed or suggested by the applied references taken alone or in any combination.

Examiner Lavarias tentatively agreed with these arguments and indicated that the application would be favorably reconsidered upon receipt of this written response.

Applicants respectfully submit that all pending claims herein define patentable subject matter over the art of record. Should Examiner Lavarias deem that any further action by the Applicants would be desirable in placing this application in even better condition for issue, he is requested to telephone Applicants' undersigned representative.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1446.

Respectfully submitted,

  
Stephen P. Burr  
Reg. No. 32,970

April 30, 2003

Date

SPB/gmh

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